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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/620,556

07/17/2003

Takaaki Yamaguchi

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01/12/2005

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EXAMINER

GORDON, RAQUEL YVETTE

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,556

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Raquel Y. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/17/2003 (this application).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 3 and 5-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/22/2003</u> | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1, 2, 4, 8-10
Claims ~~1-10~~ are rejected under 35 U.S.C. 102(e) as being anticipated by

Imanaka et al. (US006688729B1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Imanaka et al. teach every element of the instant claims including:

1. A substrate for an ink jet head including a plurality of heaters (2) for discharging ink, a driving circuit (11) for driving the plurality of heaters, and a substrate temperature sensing element (13) for sensing a substrate temperature (13, see col 31, lines 5-8), all of which are formed on the same substrate, wherein a protective element (14, 18, and 15) is provided between the substrate

temperature sensing element and a connection pad electrically which is connected with the substrate temperature sensing element (13) and which establishes electrical connection with an external component (see col 31, lines 65-col 32, line 26, and see fig 7a).

2. The substrate for an ink jet head according to claim 1, wherein the protective element (505) is disposed at a connection pad side (14, 18, and 15) relative to an intermediate position (503) on wiring between the connection pad and the substrate temperature sensing element (13);

4. The substrate for an ink jet head according to claim 1, wherein the protective element is disposed at a side of an input/output pad for the substrate temperature sensing element relative to a wiring intersecting portion where wiring intersection is made with another wiring layer on the substrate (see fig 7A);

8. An ink jet head attachable/detachable to an ink jet recording apparatus comprising: a substrate (1) for an ink jet head having a plurality of heaters for discharging ink, a driving circuit (11) for driving the plurality of heaters, and a substrate temperature sensing element (13) for sensing a substrate temperature, all of which are formed on the same substrate (1), wherein a protective element (505) is provided between the substrate temperature sensing element and a connection pad (14, 18, 15) which is electrically connected with the substrate

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temperature sensing element (13) and which establishes electrical connection with an external component (15); and a member for forming a liquid channel (7) joined to the substrate for an ink jet head and associated with the heater and also forming a discharge port (6) which belongs to one end of the liquid channel (see col 32, lines 27-51);

9. An ink jet recording apparatus comprising: a head including a substrate for an ink jet head having a plurality of heaters (2) for discharging ink, a driving circuit (11) for driving the plurality of heaters, and a substrate temperature sensing element for sensing a substrate temperature (13), all of which that are formed on the same substrate, wherein a protective element (505) is provided between the substrate temperature sensing element and a connection pad (14, 18, 15) which is electrically connected with the substrate temperature sensing element and which establishes electrical connection with an external component (fig 26); and means for applying signals to the connection pad to acquire information about head temperature by supplying the signals to the connection pad (147).

10. The ink jet recording apparatus according to claim 9, further comprising: a carriage operable to removably support the ink jet head and to make the ink jet head to scan a print medium (see col 32, line 54 and fig 29).

Allowable Subject Matter

Claims 3 and 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Indication of Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter: The following claimed limitations are not found in the prior art of record.

3. The substrate for an ink jet head according to claim 1, wherein a wiring width between the connection pad and the protective element is wider than that between the protective element and the substrate temperature sensing element.

5. The substrate for an ink-head according to claim 1, wherein the protective element is provided for a logic circuit unit composing the driving circuit, and a size of the protective element connected to the substrate temperature sensing element is equal to that of the protective element connected to the logic circuit unit.

6. The substrate for an ink jet head according to claim 1, wherein the substrate temperature sensing element includes a diode sensor.

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7. The substrate for an ink jet head according to claim 6, wherein the protective elements are a protective diode, and is disposed between an anode of the diode sensor and a power source line, between the anode and a ground, between a cathode of the diode sensor and the power source line, and between the cathode and the ground, respectively.

Contact Information

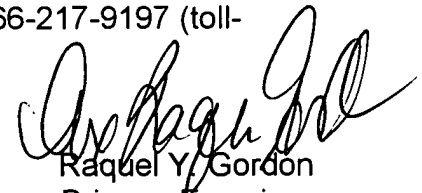
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Raquel Y. Gordon, whose telephone number is (571) 272-2145. The Examiner can normally be reached on M Tu Th and F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. A fax number is available upon request.

Any inquiry of a general nature or relating to the status of this application or proceeding may be directed to the Examiner or Supervisor.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Raquel Y. Gordon
Primary Examiner
Art Unit 2853
January 7, 2004

**RAQUEL GORDON
PRIMARY EXAMINER**